

WHAT IS CLAIMED IS:

1. An apparatus comprising:
 - a housing cover to cause electrical components on a circuit board to engage with at least one component pad of a heat sink, the housing cover being substantially coextensive with the circuit board;
 - a projection integrally formed from the housing cover, the projection located on the cover to bias the electrical component against the component pad; and
 - a mechanism that permits a vertical displacement of the projection relative to the vertical displacement of the housing cover.
2. The apparatus of claim 1 wherein the mechanism further comprises a slot extending around at least part of the projection so as to substantially decouple a vertical displacement of the projection from a vertical displacement of the housing cover.
3. The apparatus of claim 1 in which the mechanism comprises a cantilevered tab extending from a perimeter of the housing cover
4. The apparatus of claim 1, further comprising at least a first and second projection, the projections proximate each other.
5. The apparatus of claim 4 in which the projections are configured to deflect independently.
6. The apparatus of claim 4, further comprising a spanning element extending along the projections to substantially limit the upward vertical displacement of the projections.
7. The apparatus of claim 6 in which the spanning element is integrally formed with the housing cover.
8. The apparatus of claim 6 in which the spanning element is attached to the housing cover by at least one of riveting, welding, and bonding.

9. The apparatus of claim 4, further comprising a spanning lever attached to the first projection and the second projection and to an intermediate pivot therebetween.
10. The apparatus of claim 9 in which the spanning lever biases the second projection against the direction of the displacement of the first projection.
11. The apparatus of claim 9 in which a positive vertical displacement of the first projection causes a proportional negative vertical displacement of the second projection.
12. The apparatus of claim 9 in which the spanning lever is integrally formed with the housing cover.
13. The apparatus of claim 9 in which the spanning lever is attached by at least one of riveting, welding, and bonding.
14. The apparatus of claim 1 in which the housing cover is substantially planar.
15. The apparatus of claim 1 wherein the heat sink is configured for an audio amplifier.
16. The apparatus of claim 15 wherein the audio amplifier is adapted for a vehicle sound system.
17. An apparatus comprising:
 - a housing cover to cause electrical components to engage with at least one component pad extending from a heat sink;
 - first and second projections integrally formed from the housing cover, the projections located on the cover to bias the electrical component against at least one component pad;
 - a mechanism that permits a vertical displacement of the projection relative to the vertical displacement of the housing cover; and

a spanning element lever that biases the second projection against the direction of the displacement motion of the first projection.

18. The apparatus of claim 17 wherein the housing cover and heat sink are adapted for an audio amplifier in a vehicle sound system.

19. An audio amplifier configured for use in a vehicle, the amplifier comprising:

a heat sink chassis containing a circuit board and configured for dissipating heat from electrical components positioned on the circuit board to ambient surroundings;

a housing cover fitted to the chassis to cause electrical components positioned on a first side of the circuit board to engage with at least one component pad extending from the heat sink chassis;

a projection integrally formed from the housing cover, the projection located on the cover to bias a second side of the circuit board opposite the first side, to cause electrical component to engage the component pad; and

a mechanism that permits a vertical displacement of the projection relative to the vertical displacement of the housing cover.

20. A housing cover for a heat sink, the housing cover comprising:

a number of projections integrally formed from the cover, the projections located on the cover to cause integrated circuits to engage component pads extending from the heat sink, at least two of the projections being proximate each other and comprising a cantilevered tab extending from a perimeter of the housing cover, the projections being configured to deflect substantially independently;

a slot extending around at least part of the projection so as to substantially decouple a vertical displacement of the projections from a vertical displacement of the housing cover; and

a spanning element extending along at least one projection to substantially limit the upward deflection of the projections.

21. A housing cover for a heat sink, the housing cover comprising:

first and second cantilevered projections integrally formed from the cover, the projections located on the cover for biasing integrated circuits against at least one component pad extending from the heat sink;

a slot extending around at least part of the projections so as to substantially decouple a vertical displacement of the projections from a vertical displacement of the housing cover; and

a spanning lever attached to the first projection and the second projection and to an intermediate pivot therebetween;

wherein a positive vertical displacement of the first projection causes a proportional negative vertical displacement of the second projection.

22. A method of manufacturing a housing cover for an amplifier, the method comprising:

integrally forming the cover from a unitary work-piece, the cover comprising:

a projection integrally formed from the housing cover, the projection located on the cover to bias the electrical component against the component pad; and

a mechanism that permits a vertical displacement of the projection relative to the vertical displacement of the housing cover.

23. The method of claim 22 wherein the mechanism is formed to include a slot extending around at least part of the projection so as to substantially decouple a vertical displacement of the projection from a vertical displacement of the housing cover.

24. The method of claim 22 wherein the cover is formed with a first and a second projection proximate each other.

25. The method of claim 23 wherein the cover is formed with a spanning element extending along the projections to substantially limit the upward vertical displacement of the projections.

26. The method of claim 23 wherein the cover is formed with a spanning lever attached to the first projection and the second projection and to an intermediate pivot therebetween.

27. A method for engaging electrical components on a circuit board of an audio amplifier with a portion of a heat sink, the method comprising:

- providing a unitary housing cover, the cover being substantially coextensive with the circuit board, to permit a vertical displacement of integrally formed projections relative to a vertical displacement of the housing cover;

- applying the cover to the amplifier housing;

- engaging a first electrical component with the component pad by biasing an area on a second side of the circuit board, opposite the first side of the circuit board; and

- engaging a second electrical component with the component pad by biasing an area on the second side of the circuit board, opposite the position of the second electrical component.